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EXAMINER	
GRAY, JILL M	

ART UNIT	PAPER NUMBER
1794	

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10/26/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/775,174	LAWTON ET AL.	
	Examiner	Art Unit	
	Jill Gray	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 June 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,4,6-23 and 27-72* is/are pending in the application.

4a) Of the above claim(s) *53-72* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,4,6-23 and 27-52* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Pursuant to the entry of the amendment of June 17, 2009, the status of the claims is as follows: Claims 1, 3-4, 6-23, 27-72 are pending. Claims 2, 5, and 24-26 are cancelled. Claims 53-72 are withdrawn. Claim 1 has been amended. Currently, claims 1, 3-4, 6-23, and 27-52 are under prosecution.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3-4, 6-23, and 27-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bartrug 3,583,882 in view of Girgis 4,440,881, for reasons of record.

The Prior art

Bartrug discloses a glass fiber product comprising at least one glass fiber and an elastomeric latex material adhered to the at least one glass fiber. In addition, Bartrug discloses that the at least one glass fiber is coated with a sizing material prior to coating with the elastomeric latex material. See entire document and for example abstract, and column 3, lines 46-65. The sized glass fibers are coated with an aqueous elastomeric latex composition and dried to remove substantially all of the liquid component while leaving the solid component unaffected. The resultant strands are free of tack. See column 4, lines 39-60. Claim 1 requires particles adhered to the at least one strand. Bartrug discloses a rubber adhesive composition comprising a terpolymer latex dispersed in water, wherein the terpolymer is butadiene-styrene vinyl pyridine said

composition coated on the glass fiber strands. See Example. The formation of a latex dispersed in water necessarily embraces particles. Note also that Bartrug teaches a coating process that minimizes splatter of particles of the composition solids. (Column 4, lines 61-70). The particles of claim 1 can be polyolefins which would encompass the elastomeric latex of Bartrug. The dried strands of Bartrug are incorporated into a rubber matrix material. More specifically, at least one glass fiber of Bartrug is at least partially coated with a coating, wherein the coating is a residue of a coating composition, wherein the coating composition is selected from a resin-compatible coating composition. It should be noted that the sized glass fibers of Bartrug meet this limitation as well. Bartrug does not teach the average dimension of the particles in his latex.

Girgis teaches an aqueous adhesive coating composition for filamentary materials such as glass fibers and the aqueous adhesive coating composition comprises an elastomer that can be a vinyl pyridine butadiene-styrene terpolymer latex. See entire document, for example abstract, column 10, lines 15-17 and Example 1. In addition, Girgis teaches that the particle size of the elastomeric latex must be less than 2000 angstroms (0.20μm; 200nm), further teaching that a suitable butadiene-vinyl pyridine-styrene terpolymer is commercially available and has a particle size of 1100 angstroms (0.11μm; 110nm), which is within the instant claimed range. See column 10, lines 18-29.

Regarding Independent claim 1

Bartrug, as set forth above does not teach the dimension of the particles in his latex.

It is the examiner's position that a limitation with respect to the size of an article, such as the particle size, is not ordinarily a matter of invention. *In re Rose,* 105 USPQ 237 (CCPA 1955). Furthermore, Bartrug and Girgis each teach a glass fiber product comprising at least one glass fiber and particles adhered to the glass fiber, wherein the particles can be butadiene-vinyl pyridine-styrene terpolymer latex, and the glass fiber product can be incorporated into a rubber matrix material. Thus, Bartrug and Girgis are analogous art. "Section 103 requires us to presume full knowledge by the inventor of the prior art in the field of his endeavor" *In re Winslow,* 53 CCPA 1574, 1578, 365 F.2d 1017, 1020, 151 USPQ 48, 50-51, (1966).

It would have been obvious to one of ordinary skill in this art at the time the invention was made to use as the butadiene-vinyl pyridine-styrene terpolymer of Bartrug, a commercially available terpolymer such as that taught by Girgis having a low average particle size, with the reasonable expectation of success of forming glass strands having improved flexibility and improved fatigue resistance.

Regarding claims 3-4, Bartrug and Girgis each teach glass fiber strands, wherein Girgis additionally teaches the formation of woven articles. The impregnated glass strands of the prior art constitute a glass fiber prepreg.

Regarding claims 6-13, these claims are drawn to the size of the particles. As set forth above, it is the examiner's position that a limitation with respect to the size of an article, such as the particle size, is not ordinarily a matter of invention. *In re Rose,* 105 USPQ 237 (CCPA 1955). In addition, Girgis teaches that the particle size of the elastomeric latex must be less than 2000 angstroms (0.20μm; 200nm), further teaching

that a suitable butadiene-vinyl pyridine-styrene terpolymer is commercially available and has a particle size of 1100 angstroms (0.11μm; 110nm), which is within the instant claimed range. See column 10, lines 18-29.

Regarding claims 14-18 and 32 Girgis teaches that two or more elastomeric latexes can be blended wherein each of the latexes can have different particle sizes, wherein the particle sizes are within the instant claimed ranges for the first average particle dimension and the second particle dimension. See column 7, lines 29-58 and column 8, lines 35-66. Moreover, it is the examiner's position that "where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation." *In re Aller,* 105 USPQ 233 (CCPA1955).

Regarding claim 19, this limitation is drawn to the shape of the particles, which is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties of the resultant glass product, wherein said properties are directly related to the specific particle shape.

Regarding claims 20-23 and 47-50, Girgis teaches that the amounts of various components in his coating composition can be varied to some degree and can be varied in relationship to each other, further teachings that the vinyl-pyridine latex can vary within a range from about 5 to about 55 weight percent on a dried basis of the aqueous coating composition. See column 9, line 59 through column 10 and line 3. In addition, Girgis teaches that the suitable commercially available vinyl-pyridine elastomeric latexes have 40-42% solids which would result in a coating composition comprising an

amount of dispersed particles within the instant claimed ranges of present claims 47-50. Furthermore, it is the examiner's position that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. *In re Aller,* 105 USPQ 233 (CCPA 1955).

Regarding claims 27-28 and 30, as set forth previously, the latex particles of Bartrug and Girgis are polyolefin, organic and solid.

Regarding claim 29, Girgis teaches that his elastomeric matrix material can contain monoolefinic hydrocarbons such as ethylene. See column 4, lines 41-44. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the coating composition to include (comprise) polyethylene particles, commensurate with the specific composition of the elastomeric matrix material to enhance adhesion of the coated glass strand and the matrix material.

Regarding claim 31, Bartrug teaches a composition comprising inorganic particles such as silica and calcium carbonate. See Example.

Regarding claims 33-46, the combined teachings of Bartrug and Girgis teach particle sizes and an amount of particles that are within the claimed critical ranges. Therefore, the examiner has reason to believe that properties such as the tractive tension of the glass fiber product, frictional tension, separation of filaments or reduction in the degree of interfilament bonding are within the parameters contemplated by applicants, in the absence of factual evidence to the contrary. Applicants are invited to provide such evidence.

Regarding claim 51, Bartrug and Girgis each teach the application of a sizing composition onto the glass fibers or the usage of sized glass fibers, i.e. glass fibers having a coating of a dried residue of a resin-compatible coating. Applicants' should note that present claim 1 does not require that the particles be present in the coating composition comprising a dried residue of a resin-compatible coating. Moreover, present claim 1 does not require that the particles be present in a coating composition.

Regarding claim 52, the specific type of glass fibers is not construed to be a matter of invention in the absence of factual evidence of unexpected or superior properties in the resultant glass fiber product, wherein said properties are directly related to the specific type of glass fiber used. Applicants are invited to provide such evidence. In addition, Girgis teaches that glass fibers of the type contemplated by applicants can be used. See column 4, lines 4-13.

Therefore, the combined teaching of Bartrug and Girgis would have rendered obvious the invention as claimed in present claims 1, 3-4, 6-23, and 27-52.

Response to Arguments

4. Applicant's arguments filed June 17, 2009 have been fully considered but they are not persuasive.

Applicants argue that Bartrug and Girgis both fail to teach or suggest a glass fiber product comprising at least one glass fiber having particles of the claimed size and composition adhered thereto.

The examiner disagrees. In particular, as set forth above, at least one glass fiber of Bartrug is at least partially coated with a coating, wherein the coating is a residue of a

coating composition, wherein the coating composition is selected from a resin-compatible coating composition. Girgis teaches that the particle size of the elastomeric latex must be less than 2000 angstroms (0.20μm; 200nm), further teaching that a suitable butadiene-vinyl pyridine-styrene terpolymer is commercially available and has a particle size of 1100 angstroms (0.11μm; 110nm), which is within the instant claimed range. The combined teachings of Bartrug and Girgis clearly provide direction for forming a coating composition using a commercially available latex having a low average particle size, with the reasonable expectation of success of forming glass strands having improved flexibility and improved fatigue resistance.

Applicants argue that Bartrug appears to be silent with respect to adhering particulate materials to glass fibers, or the incorporation of such materials into its disclosed coating compositions.

The examiner disagrees. In particular, Bartrug discloses an aqueous elastomeric coating composition comprising a terpolymer latex. After coating, the liquid component is removed or volatized while leaving the solid component substantially unaffected, whereby the fibers are sufficiently dry and free of tack. See column 4, lines 25-45. Bartrug discloses that the drying or volatilizing off of the coating composition proceeds in a relatively rapid and violent manner such that particles of the composition solids are driven off of the coated glass fibers. See column 4, lines 61-70. The skilled artisan would reasonably presume that if the composition solids contain particles that are driven off, then said composition solids would also contain particles that are adhered to the fiber surface. As to incorporation of particulate materials into the disclosed coating

composition of Bartrug, present claim 1 does not require that the particles be formed from a material different from that of the coating composition or that said particles are incorporated into a coating composition. Hence, present claim 1 does not distinguish from the glass fiber product comprising at least one glass fiber and particles adhered to the at least one glass fiber and the at least one glass fiber that is at least partially coated with a coating, wherein the coating is a residue of a coating composition, wherein the coating composition is selected from a resin-compatible coating composition of Bartrug.

Applicants argue that Bartrug appears to teach away from the use of particulate materials in his coating composition when he expressly compares his disclosed coating compositions to prior art processes that apply various powdered coatings as slip coatings.

Agreeably Bartrug teaches that additional powdered slip coatings are not necessary with his invention. However, it should be noted that applicants' claim 1 does not distinguish nor describe the particles other than the materials that they are made out of and an average particle dimension. While present claim 1 may embrace powdered particulate material slip coatings that Bartrug appears to distinguish from, claim 1 also embraces droplets and/or splatter formed from dispersed latex materials deposited onto the fiber surface.

Applicants argue that the Office has not explained why particles will necessarily form, and the cited references appear to provide no information supporting the Office's conclusion that particles will form, additionally arguing that Bartrug further heats the

coated glass strands to effect curing and/or reaction of the components of the coating composition but does not appear to disclose that the solid components of its composition and in particular the disclosed terpolymer latex, are in particulate form after the disclosed secondary heat treatment.

In this regard, applicants' acknowledgment that Bartrug's terpolymer latex dispersed in water necessarily embraces particles is noted. It is also the examiner's position that the application of said dispersion onto a fiber surface does not necessarily convert the particulate latex dispersion into a coating composition that does not contain a particulate phase. It is also the examiner's position that drying to remove the solvent does not necessarily result in a fiber surface that does not contain particulate material. This is evident by Bartrug's teachings that the drying or volatilizing off of the coating composition proceeds in a relatively rapid and violent manner such that particles of the composition solids are driven off of the coated glass fibers. See column 4, lines 61-70. As set forth above, it is the examiner's position that the skilled artisan would reasonably presume that if the composition solids contain particles that are driven off, then said composition solids would also contain particles that are adhered to the fiber surface. Accordingly, as set forth above, it should be noted that Bartrug teaches the evaporation of the solvent and a drying forces that removes particulate solids. The reference does not disclose a continuous coating on the fiber surface. However, the skilled artisan would have reason to believe that based upon the combined teachings of Bartrug and Girgis, the size of the dispersed solid particles and force of drying would result in driving solvent on the fiber surface forming a discontinuous coating. Curing would not

necessarily alleviate this. The claim language of present claim 1 of an "average dimension" would include flattened droplets, a non-round or non-spherical particles, and latex particles that have undergone partial coalescence to form a discontinuous coating. Hence, the examiner has reason to believe that the coating of Bartrug as modified by Girgis would result in particles adhered to at least one glass surface, wherein the particles have an average dimension within the present claimed range. Accordingly, it is the examiner's position that if a *prima facie* case of obviousness is established, the burden shifts to the applicant to come forward with arguments and/or evidence to rebut the *prima facie* case, however, arguments of counsel cannot take the place of factually supported objective evidence. See MPEP 2145.

Applicants argue that Girgis does not cure the deficiencies of Bartrug as discussed above, further arguing that Girgiss' disclosed particle size ranges appear to relate to the size of the latex particles as dispersed and that he does not appear to teach or suggest that the latex components of the disclosed coating composition remain in particulate form once the coating composition is deposited on glass fibers.

In this regard, the examiner's position is as set forth above, and incorporated herein, namely, that that based upon the combined teachings of Bartrug and Girgis, the size of the dispersed solid particles and force of drying would result in driving solvent on the fiber surface forming a discontinuous coating. Curing would not necessarily alleviate this. The claim language of present claim 1 of an "average dimension" would include flattened droplets, a non-round or non-spherical particles, and latex particles that have undergone partial coalescence to form a discontinuous coating. Hence, the

examiner has reason to believe that the coating of Bartrug as modified by Girgis would result in particles adhered to at least one glass surface, wherein the particles have an average dimension within the present claimed range.

Applicants argue that Girgis does not appear to provide any information establishing that its disclosed materials will remain in particulate form after being deposited and exposed to Bartrug's heat treatment processes, further arguing that applicants' respectfully submit that the burden remains on the Office to explain why and how: a) the proposed combination necessarily results in the claimed invention; or b)one of ordinary skill would see any reason to modify the cited references to arrive at the claimed invention, and that such an explanation is particularly necessary, given that Bartrug and Girgis focus on the provision of a coating on the surface of glass fibers, not on the deposition of particles.

The examiner disagrees for reasons previously stated in this Office Action and incorporated herein. In particular, it is the examiner's position that the application of said dispersion onto a fiber surface does not necessarily convert the particulate latex dispersion into a coating composition that does not contain a particulate phase. It is also the examiner's position that drying to remove the solvent does not necessarily result in a fiber surface that does not contain particulate material. This is evident by Bartrug's teachings that the drying or volatilizing off of the coating composition proceeds in a relatively rapid and violent manner such that particles of the composition solids are driven off of the coated glass fibers. See column 4, lines 61-70. Again, as set forth above, the skilled artisan would have reason to believe that based upon the combined

teachings of Bartrug and Girgis, the size of the dispersed solid particles and force of drying would result in driving solvent on the fiber surface forming a discontinuous coating. Curing would not necessarily alleviate this. The claim language of present claim 1 of an "average dimension" would include flattened droplets, a non-round or non-spherical particles, and latex particles that have undergone partial coalescence to form a discontinuous coating. Hence, the examiner has reason to believe that the coating of Bartrug as modified by Girgis would result in particles adhered to at least one glass surface, wherein the particles have an average dimension within the present claimed range. Accordingly, it is the examiner's position that if a *prima facie* case of obviousness is established, the burden shifts to the applicant to come forward with arguments and/or evidence to rebut the *prima facie* case, however, arguments of counsel cannot take the place of factually supported objective evidence. See MPEP 2145.

No claims are allowed.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

6. Caroselli, et al., 2,754,223 discloses a glass fiber product comprising at least one glass fiber; and particles adhered to the at least one glass fiber, wherein at least one parameter selected from the particle size and the amount of particles is effective to reduce the tackiness of the glass fiber product, and wherein the at least one glass fiber is at least partially coated with a coating, wherein the coating is a residue of a coating

composition, wherein the coating composition is a resin-compatible coating composition. The particles act as ball bearing surfaces and facilitate movement between the fibers without abrasion, or more specifically, are effective to reduce tack. See entire document, for example, column 2.

7. Jackson 3,377,233 discloses a glass fiber product comprising at least one glass fiber and particles adhered to the at least one glass fiber, and the at least one glass fiber is at least partially coated with a coating, wherein the coating is a residue of a coating composition, wherein the coating composition is selected from a resin-compatible coating composition.

8. Hayes, 3,627,601 discloses a glass fiber product comprising at least one glass fiber and particles adhered to the at least one glass fiber, wherein the at least one glass fiber is at least partially coated with a coating composition that is a resin-compatible coating composition. The particles of Hayes are dry lubricants.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jill Gray whose telephone number is 571-272-1524. The examiner can normally be reached on M-Th and alternate Fridays 10:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jill Gray/
Primary Examiner
Art Unit 1794

jmg